Soumik Bhattacharyya

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Aspiring researcher with a Master's in Physics and expertise in Astrophysics through a research-focused dissertation

Education

2018 – 2023 **Five Year Integrated M.Sc.** (Physical Science)

National Institute of Science Education and Research (NISER), HBNI, Bhubaneswar, India

CGPA: 7.83

2018 **Intermediate/ Higher Secondary**

Burdwan Municipal High School, West Bengal Council for H.S. Education

Percentage: 92.40%

2016 **Matriculation/ Secondary**

Burdwan Municipal High School, West Bengal Board of Secondary Education

Percentage: 94.57%

Projects

2022 – Now *Common Envelope Evolution on the Asymptotic Giant Branch of Binary Star Evolution: Towards Building a Simple Model*

Physics Dissertation Project **Dr. Luke Chamandy**, SPS, NISER

2023 – Now *Venus VIRTIS Data Pipeline for Surface Compositional Analysis*

Physics Dissertation Project **Dr. Guneshwar Thangjam**, SEPS, NISER

2023 – Now *Retrieving Pressure-Temperature and Water Vapour Profiles in Earth's Atmosphere from INSAT 3DR Data*

Machine Learning Project with **Dr. Jayesh M. Goyal**, SEPS, NISER and **Dr. Subhankar Mishra**, SCS, NISER

2022 *Surface Properties of Maxwell Montes region of Venus using Arecibo Dual-Polarization Radar Data*

Summer Internship with **Dr. Sriram Saran Bhiravarasu**, SAC, ISRO

2021 – 2022 *Pre-processing and Analysis of hyper-spectral images of Asteroid Ceres acquired by the VIR Spectrometer on-board NASA's Dawn Mission*

Continued Semester Project with **Dr. Guneshwar Thangjam**, SEPS, NISER

2019 *Study of gravity bound 3-body system using orbital dynamics and intensity interferometry*

Summer Internship with **Dr. Subrata Sarangi**, CUTM, Jatni

Conference Presentations

VEXAG *Surface Properties of Maxwell Montes Using New Arecibo Dual-polarization Radar Data* (Online Oral Presentation)

Venus Exploration Analysis Group, November 2022

Albuquerque, New Mexico, USA

Venus-SC 2022 *Radar scattering properties of Maxwell Montes region using ground-based radar data* (Short Video Presentation)

Award Best Paper Presentations among the Young Researchers

Venus Science Conference, September 2022

Physical Research Laboratory (PRL), Ahmedabad

IPSC 2022 *Thermal and Photometric Analysis of Asteroid Ceres from VIR spectrometer onboard NASA Dawn* (Online Oral Presentation)

Indian Planetary Science Conference, March 2022

Physical Research Laboratory (PRL), Ahmedabad

Ceres 2021 *Thermal Correction of Dawn/VIR data using Clark's Approach and Hapke Model of Photometry* (Online Oral Presentation)

Ceres Workshop, October 2021

Max Planck Institute for Solar System Research, Göttingen, Germany

Physics 2019 *Study of gravity bound 3-body system using orbital dynamics and intensity interferometry* (Offline Poster Presentation)

International Conference on Fundamental Physics, September 2019

BM Birla Science Centre, Hyderabad, India

Other Conferences and Workshops

Sep 2020 *Advances in High Energy Physics (AHEP)*

Dr. B. R. Ambedkar National Institute of Technology, Jalandhar (Online)

Oct 2018 *Regional Workshop on Research and Opportunities, Indian Women and Mathematics*

NISER Bhubaneswar

Oct 2018 *One Day RAD@home Astronomy Workshop* by Dr. Ananda Hota, CEBS
NISER Bhubaneswar

Fellowship

INSPIRE Recipient of INSPIRE Scholarship and Contingency Grant (Summer Internship) by Department of Science and Technology (DST), Govt. of India

Courses Completed

Classical Mechanics- I & II, Mathematical Methods- I & II, Electronics, Electromagnetism- I & II, Quantum Mechanics- I & II, Statistical Mechanics, Special Theory of Relativity, Nuclei and Particles, Atoms Molecules and Radiation, Introduction to Condensed Matter Physics, Quantum Field Theory- I, Experimental Techniques, Nonlinear Optics and Lasers, Introduction to Cosmology, Astronomy and Astrophysics, General Theory of Relativity, Quantum Chemistry- I, Theory of Computation, Machine Learning, Probability Theory, Programming for Everybody (Getting Started with Python) and Python Data Structures (Dr. Charles Severance, University of Michigan and Coursera), Astronomy: Exploring Time and Space (Dr. Chris Impey, The University of Arizona and Coursera)

Technical Skills

Programming Languages: Python (proficient), C++ (basic), Scilab (introductory), Matlab (introductory)

Relevant Softwares: VisIt, ISIS, ArcGIS, ENVI, SAO-DS9

Languages: English (fluent), Bengali (native) and Hindi